CRITICAL INCIDENT STRESS MANAGEMENT FOR WHATCOM COUNTY, WASHINGTON: IS IT TIME FOR A CHANGE?

EXECUTIVE LEADERSHIP

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ABSTRACT

Over the past few years, Critical Incident Stress Debriefing has been the subject of worldwide debate. The problem was the Whatcom County fire service and the Bellingham Fire Department did not know if the Mitchell model of Critical Incident Stress Debriefing was the most effective method of mitigating and reducing posttraumatic stress, or if more effective programs were available.

The purpose of this research project was to determine if the Bellingham Fire Department and Whatcom County fire agencies should continue to use the Mitchell model of Critical Incident Stress Debriefing. This project examined three research questions: (a) To what degree is the Mitchell model of Critical Incident Stress Debriefing still accepted as a model for critical incident stress management? (b) What are alternative models for psychological debriefing related to emergency service workers? (c) What are the personality characteristics and cultural or situational characteristics of Whatcom County and Bellingham firefighters that must be considered in an intervention program designed to mitigate and reduce posttraumatic stress?

This project included an extensive literature review and interviews with nationally recognized disaster mental health experts and a survey designed and administered to 336 Whatcom County and Bellingham firefighters. The survey assessed their experiences with the Whatcom County CISM team, exposure to traumatic situations, perceptions of the culture within the fire agencies regarding expressing emotion, coping styles, distress, and posttraumatic growth as a result of being a firefighter.

The results of this literature review and interviews identified that the Mitchell model of Critical Incident Stress Debriefing was still being hotly debated by the medical and mental health

communities, resulting in a movement away from the Mitchell Model of psychological debriefings. While other psychological debriefing methods have been developed, almost all appeared to be a variation of the Mitchell model. A recently developed tool, the Group Resiliency Briefing ™ model (WorkLife Media LLC, 2004) appeared to be a viable debriefing alternative that focuses on education about stress management rather than attempting to draw out thoughts and feelings.

The results of the survey revealed that almost 90% of the firefighter participants in Whatcom County believed that the county CISM program would be helpful for them. However, about two-thirds believed they would be comfortable sharing their emotions in a group setting, which is a component of CISM. The results also showed these firefighters were an extremely hardy group, with significant resources to help cope with stress, including personal resiliency, and social support networks. Lastly, over 90% of the firefighters viewed stressful events on the job as growth opportunities, and over 75% feeling that they were emotionally stronger as a result of their experiences.

The recommendations based on the research findings included entering into a planning process with all county emergency response agencies to assess the current CISM approach and determine if the Group Resiliency Briefing ™ model is more appropriate for Whatcom County emergency responders. Until such time as a new model is adopted, the current approach to providing CISM debriefings should continue.

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INTRODUCTION

To mitigate and reduce posttraumatic stress among its personnel, the City of Bellingham Fire Department has participated in a county-wide Critical Incident Stress Management (CISM) team since 1986. Over the past four years, the number of requests for engaging the CISM team has declined, along with volunteer participation from various emergency response agencies on the CISM Team. This decline in the use of the CISM team coincides with the current controversy surrounding the efficacy of the most common method of post-incident debriefings, the Mitchell model of Critical Incident Stress Debriefing (CISD). Like other fire agencies across the country, the Whatcom County fire service, including the Bellingham Fire Department, does not know if the Mitchell model of CISD is the most effective method of mitigating and reducing posttraumatic stress, or if more effective programs are available.

The purpose of this research project is to determine if the City of Bellingham Fire Department and all Whatcom County fire agencies should continue to rely on and use the Mitchell model of CISD. In order to explore this issue, this project examines three research questions: (a) To what degree is the Mitchell model of CISD still accepted as a model for critical incident stress management? (b) What are alternative models for psychological debriefing related to emergency service workers? (c) What are the personality characteristics and cultural or situational characteristics of Whatcom County and Bellingham firefighters that must be considered in an intervention program designed to mitigate and reduce posttraumatic stress?

This project provides an extensive review of the literature and interviews with nationally recognized disaster mental health experts. Based on this review, a descriptive method research tool was developed with the assistance of Dr. David Sattler, a disaster mental health expert from Western Washington University. This questionnaire, completed by 336 Whatcom County and Bellingham firefighters, assessed their experiences with the Whatcom County CISM team, exposure to work-related traumatic situations, perceptions of the culture within the fire agencies to express emotion and work with other firefighter's coping style, distress, and posttraumatic growth as a result of being a firefighter.

BACKGROUND AND SIGNIFICANCE

Bellingham is located in Whatcom County, in the far northwestern corner of Washington State. It is nestled between the Cascade mountain range and the San Juan Islands, on the shores of Bellingham Bay. The 2000 census lists the city's population at 67,171 persons and a county population of 166,814.

Fire, emergency medical, and rescue response for the City of Bellingham is provided by 127 operations firefighters and firefighter paramedics. The unincorporated area of Whatcom County and the small municipalities are served by approximately 500 predominately volunteer firefighters from 17 fire districts and the City of Lynden.

In the spring of 1983, a local event highlighted the need to assist fire personnel in handling stress reactions to traumatic events. A Bellingham Fire Department engine crew responded to a gasoline leak at a local gasoline filling station. An employee of the filling station ignored firefighter direction to stay away from the pooled gasoline, and attempted to mitigate the

fuel spill. Unfortunately, the gasoline ignited, burning the employee over 95% of his body before the firefighters could extinguish the flames. This horrific event appeared to cause significant mental and emotional trauma for the responding firefighters and paramedics, because the crews observed the accident, and then had to treat the visually repulsive injuries. Furthermore, they reported feeling guilty that by not taking other measures they were unable to keep the person out of danger. This event resulted in the retirement of four out of the five firefighters within approximately one and one half years (G. Hedberg, personal communication, June 7, 2004).

At the time, there was no coordinated mental health support service or method in dealing with emergency responder crisis in the county. This seminal event motivated key fire department leadership to seek out mental health assistance for first responders who experience horrific traumas and situations. In 1989, after careful review of programs and coordination with Whatcom County fire agencies, the Bellingham Fire Department initiated the Whatcom County Critical Incident Stress Debriefing (CISD) Team, enlisting volunteer support from local mental health professionals and peer emergency responders from fire and law enforcement agencies throughout Whatcom County. These personnel were trained in the Jeffery Mitchell model of CISD, and all Whatcom County fire and emergency response agencies were informed about the team and the need for CISD. The Bellingham Fire Department assumed lead agency responsibilities in providing oversight and support for this program.

In the early years after formation of the Whatcom County CISD team, the team leadership aggressively promoted the perceived benefits of the CISD process to local emergency response agencies, and actively recruited emergency responder volunteers to be trained as peer

debriefers. This effort resulted in numerous requests for debriefings. In 1996, the name of the team changed to the Whatcom County Critical Incident Stress Management team to reflect expansion of the definition of critical incident stress intervention techniques through the International Critical Incident Stress Foundation (ICISF), which uses the Mitchell model of CISD.

On June 10, 1999, a devastating event for the Bellingham Fire Department and the City of Bellingham further highlighted the importance of providing psychological and mental health services to responders. A 16 inch underground petroleum pipeline ruptured, spilling approximately 230,000 gallons of gasoline into a pristine salmon stream and creek. This gasoline was accidentally ignited by two 10-year old boys who inadvertently ignited the gasoline fumes while playing in the area. The resulting explosion and fire traveled approximately one and one half miles in less than 10 seconds, scorching and destroying one and one half miles of undeveloped park land and one residential structure. The two young boys sustained third degree burns over 90% of their bodies, yet remained conscious until their arrival at the hospital, with the paramedic crews and firefighters consoling them until they were sedated. During a subsequent search, an 18-year-old young man was found dead in the creek bed, apparently asphyxiated by the gasoline fumes before the explosion. This event resulted in an unprecedented response from a wide range of emergency response agencies from local fire districts to the Environmental Protection Agency.

The psychological impact of the tragedy was devastating for the community, but it was significantly more severe for the paramedics who treated and transported the two mortally injured boys. Both paramedics took a significant amount of time off work, received counseling, and one paramedic ultimately decided to relinquish his paramedic certification.

In the five years since that event, requests for formal debriefings have waned, and the CISM team has had difficulty recruiting peer debriefers, especially from the fire service. The team also has struggled with maintaining strong leadership and consistent membership, presumably due to a low number of debriefing requests. However, during this period Whatcom County emergency response agencies and the City of Bellingham began offering extensive mental health services, including crisis intervention, through employee assistance programs (EAP). It is possible that firefighters have begun to utilize services through these programs rather than those offered by the CISM team.

Review of Psychological Debriefing

In recent years, several mental health professionals have vigorously questioned not only the degree to which mitigates posttraumatic stress, but also whether psychological debriefing might actually prolong stress and increase the chances that the responder will develop posttraumatic stress disorder (McNally, Bryant, & Ehlers, 2003). In their authoritative assessment of psychological debriefing, McNally, Bryant, and Ehlers (2003) raised several important issues: (a) Do psychological interventions performed shortly after critical incidents prevent later psychological problems? (b) Do persons exposed to trauma who receive debriefings experience fewer mental health difficulties than those who do not? (c) Does debriefing impede natural recovery mechanisms? They summarized the debate concerning these issues by stating:

> Despite the intuitive plausibility of these assumptions, psychological debriefing has sparked a heated international controversy that captured the attention of government policymakers, the media, and the general public after the recent terrorist attacks. The controversy has grown as increasing numbers of studies have failed to confirm the efficacy of psychological debriefing as a method for attenuating posttraumatic distress (p. 46).

They concluded that the scientific research demonstrating the effectiveness of psychological debriefing is marginal at best. They also note that recent studies indicate debriefing may have a detrimental effect, and therefore recommend that compulsory debriefings should cease (McNally, Bryant, & Ehlers 2003).

Paton, Smith, and Stephens (1998) stressed the need to develop objective appraisal criteria to measure the effectiveness of psychological interventions for emergency workers, as well as to assess positive consequences. For example, emergency responders frequently consider responding to traumatic events as a rewarding experience that stimulates personal growth. As such, Paton, Smith, and Stephens (1998) suggest that "…failure to accommodate this possibility within intervention processes may counter the beneficial effects of their experience, increasing their risk over time" (p. 6).

The recent under-use of the CISM team in Whatcom County, coupled with the ongoing controversy concerning the effectiveness of the CISD/CISM approach, creates an opportunity to evaluate the mental health intervention approach in Bellingham and Whatcom County and make appropriate changes to ensure we are providing legitimate and effective mental health support for our personnel.

This research project is consistent with the concepts and objectives noted in the National Fire Academy Executive Leadership Student Manual (2000). Unit Three discusses the "Groupthink" phenomenon, and identifies "Rationalization" as a key component of the Groupthink phenomenon. The Manual (2000) explains rationalization in this context: "Members of the group ignore warnings; they also collectively construct rationalizations in order to discount warnings and other forms of negative feedback that, taken seriously, might lead the group to reconsider its assumptions" (p. 3-4). The continued zeal of CISD/CISM proponents nationally and locally in the face of mounting evidence questioning the efficacy of CISD/CISM suggests an argument that rationalization may be a key impediment by various CISM groups to objectively analyze the controversy.

LITERATURE REVIEW

To address the research questions, it is important to review the evolution legitimizing psychological debriefing and the Mitchell Model of CISD/CISM, and the current debate and findings regarding the efficacy and validity of psychological debriefing. This project then identifies other common psychological debriefing methods, and psychological characteristics of emergency responders that may influence treatment approaches.

Defining Stress and Posttraumatic Stress Disorder

In their assessment of stress as a risk factor related to health, Stroebe and Stroebe (1995) describe stress as a pattern of bodily responses that occurs when an organism is exposed to a stressor. They also note Lazarus and Folkman (1984), who define psychological stress as "…a particular relationship between the person and the environment that is appraised by the individual as taxing or exceeding his or her resources and endangering his or her well-being" (p. 185). The concept of psychological stress is extremely important because it suggests that in any given stressful situation the degree of stress experienced depends on the stressors in the situation, the personal resources of the individual, and the individual's perception of the stressor and his/her resources (Stroebe & Stroebe, 1995).

In defining post-traumatic stress disorder (PTSD), Lahey (2001) explained, "The condition caused by extremely stressful experiences in which the person later experiences anxiety and irritability; has upsetting memories, dreams, and realistic flashbacks of the experience; and tries to avoid anything that reminds him or her of the experience" (p. 545).

Conservation of resource (COR) stress theory is garnering increased attention, and is based on the concept that resource management is an integral component in the perception of stress. It proposes that stress occurs when an individual's resources are threatened or lost, or when individuals are unable to determine a course of action that will protect or enhance their resources through individual or collective efforts (Hobfoll, 2001). In further explaining psychological stress in this context, Hobfoll (2001) states that stress will occur in three basic instances: (a) when individuals' resources are threatened with loss, (b) when individuals' resources are actually lost, or (c) where individuals' fail to gain sufficient resources following

significant resource investment. Examples of resource categories include: (a) personal characteristics (job skills, sense of self-esteem), (b) object resources (car, home, clothing), (c) condition resources (work situation, length of marriage), and (d) energy resources (monetary wealth, credit, insurance) (Monnier, Cameron, Hobfoll, & Gribble, 2002). The framework by which individuals and groups experience and cope with stress due to resource loss will be explored later in this section.

Evolution of Psychological Debriefing

It is widely accepted that the beginnings of the psychological debriefing model were born on the battle fields of World War II, where Brigadier General Samuel Marshall initiated group discussions with troops to gather intelligence and facts related to battle, and coincidentally noted the "spiritually purging" emotional effects related to these debriefings (Rose & Tehrani, 2002).

During this same time period, researchers realized that soldiers were not the only ones who experienced traumatic events, and began studying victims of fires, floods, earthquakes, and transportation accidents. One researcher who worked with the victims of the Coconut Grove nightclub fire, in 1944, developed psychological interventions to help the survivors and families, and began what many consider to be the modern era of crisis intervention (Rose & Tehrani, 2002; Everly Jr. & Mitchell, 1999). Every Jr. and Mitchell (1999) recalled President John F. Kennedy's national effort in the early 1960's to improve mental health services at the local level, and noted the development of community outreach programs designed to reduce (a) the number of patients with mental health disorders, (b) the duration of disorders that occur, and (c) impairment resulting from these disorders. This community outreach approach to crisis

management, mainly client-centered counseling and basic problem solving and conflict resolution techniques, lasted throughout the 1970's (Everly Jr. & Mitchell, 1999).

Beall (1997) noted that a watershed moment for mental health crisis response and intervention occurred when post-traumatic stress disorder (PTSD) was formally recognized as a valid medical condition in the Diagnostic and Statistical Manual of Mental Disorders-III (DSM-III) in 1980. She recognized the long evolution in formally recognizing this condition, stating: "Clearly this disorder has achieved increasing respect in the psychiatric community and continues to evolve in terms of it's classification in the DSM" (p. 2). Everly Jr. and Mitchell (1999) also feel this legitimized the concept of mental injury after a traumatic event.

However, Beall (1997) also notes that researchers debated the validity of PTSD as a legitimate medical condition.

> Amidst all the scientific inquiry and serious scholarly consideration given to PTSD, a growing skepticism exists for this syndrome. Many are reluctant to accept this disease model, believing that the psychiatric community fabricates this disorder for purposes of providing compensation and support to trauma suffers such as Vietnam veterans (p. 15).

Several years later, in 1994, DSM-IV included Acute Stress Disorder as a legitimate mental health condition related to PTSD, that occurs within the first 30 days following a traumatic event (Everly Jr. & Mitchell, 1999; McNally, Bryant & Ehlers, 2003).

In the early 1980's, a combination of disasters further highlighted the need and potential for psychological debriefing after a disaster event. The 1982 Air Florida airline crash in Washington, D.C. highlighted the deficiency of existing methods to treat emergency worker mental trauma, with several responders developing significant posttraumatic stress symptoms

and illnesses (Everly Jr. & Mitchell, 1999). Researchers reviewed the outcomes of a then new process called group debriefing conducted after the 1978 PSA airline crash in Southern California, and the 1982 San Ysidro, California, McDonald's Massacre in which several customers were shot and killed. These findings suggested a drop in disability claims and retirements of emergency workers for those who participated in the group debriefing when compared to other disaster event outcomes (Vilolanti, Paton, & Dunning, 2000).

During this time, Jeffery Mitchell, a former firefighter and paramedic, developed the most widely used psychological debriefing approach called Critical Incident Stress Debriefing (CISD). It was a structured six step individual or group debriefing process created to reduce emergency worker stress (Mitchell, 1983). Mitchell (1983) noted that a single debriefing session "will generally alleviate the acute stress responses which appear at the scene and immediately afterwards and will eliminate or at least inhibit, delayed stress reactions" (p. 36). He believes this can be achieved because the group process allows participants to learn and understand the facts and perspectives of other responders, creates a safe environment where responders can share their story and feelings, and creates a sense of psychological closure regarding the event (Everly Jr. & Mitchell, 1999).

The Mitchell model has been modified, and there are now seven components. In the first phase, the team facilitates introductions of participants, ensuring all participants belong at the debriefing. The team then provides a short overview of the process and debriefing timeframes, and addresses general logistical concerns and rules about how debriefings are conducted. In the second phase, each participant is encouraged to share his or her observations and role in the event. In the third phase, participants have the opportunity to share their most prominent

thoughts related to the event. The fourth phase allows participants to share their feelings about the worst part of the event for them and their reaction to this. The fifth phase provides an opportunity for participants to share any feelings of stress as a result of the event. In the sixth phase, the team provides information related to the signs and symptoms of stress reactions, and the actions the participants can take to reduce their vulnerability to adverse stress reactions. The final phase allows participants to ask any clarifying questions, provides reassurance to the participants, and allows an opportunity to provide individualized support as necessary for those who appear to have reacted strongly to the event (Everly Jr. & Mitchell, 1999).

Since Mitchell's original articles espousing the benefits of CISD, the concept of CISD has expanded into a broad spectrum of crisis mental health processes and services. In 1989, Mitchell and others formalized and institutionalized the CISD philosophy by creating the International Critical Incident Stress Foundation, and began using the term "Critical Incident Stress Management" (CISM). Everly Jr. and Mitchell (1999) define CISM as a holistic, integrated, and comprehensive multi-component crisis and disaster mental health services program, listing the intervention components of CISM to include: (a) pre-incident preparation/education, (b) individual crisis support, (c) demobilization debriefings, (d) defusings, (e) critical Incident Stress Debriefings (CISD), and (f) family and organizational intervention.

Flannery Jr. and Everly Jr. (2000) suggest that this multi-modal approach addresses the basic principles of crisis mental health intervention. These principles include immediate intervention, stabilizing victims by restoring some semblance of order and routine, facilitating understanding of what happened, assist victims in regaining control, and encouraging self reliance.

The evolution and expansion of Mitchell's approach to psychological crisis support is partially driven by the recognition that concentrating on one simplistic approach of post-incident psychological support does not meet the perceived needs of the emergency responders, and that trying to apply the rigid seven step CISD group debriefing model globally is ineffective (Mitchell (1999).

This evolution from a simple group psychological group debriefing model approach to dealing with posttraumatic stress into a multi-modal crisis psychological support approach created confusion and an identity problem for Mitchell's process and organization. Everly Jr. and Mitchell (1999) note:

> Some of the confusion surrounding the term CISD stems from the fact that originally Mitchell had used the term CISD in a dual capacity: (1) to refer to this specific 7-stage group crisis intervention technique, as well as (2) an umbrella term for a collection of crisis intervention techniques for both groups and individuals (p. 20).

Other researchers, critical of the CISD/CISM process point out the identity crisis of Mitchell's method. Devilly and Cotton (2004) noted a lack of clear delineation of the definitions and application of CISD and CISM, accusing Mitchell and others of promoting "pseudoscience" in part due to this lack of clarity. They expressed their concerns with proponents of CISD/CISM, noting:

> Yet again, even when replying to our charge that CISM has not been made logically distinct from CISD and has not been scientifically defined, both Mitchell and Robinson present CISM as possessing an unlimited number of features, provide an open ended, infinite conjunction of interventions as constituting CISM and still do not offer the necessary and sufficient conditions as to what approximates CISM (p. 36).

The Current Debate

During the past decade, there has been significant public debate about the debriefing process, especially the Mitchell CISD/CISM approach. The parties arguing the issue in scientific journals, trade magazines, and the media are passionate and resolute in their beliefs. Bledsoe and Barnes (2003) summarized this climate in a recent article concerning the efficacy of CISD/CISM:

> There are few things in emergency medical services that stir up emotion and controversy like the debate over whether we should use Critical Incident Stress Management (CISM)…Proponents of CISM are loyal to the practice and often cite anecdotal evidence as to its effectiveness. Likewise, critics point to various research studies that indicate CISD is ineffective and possibly harmful. In response, CISM proponents try to discredit the negative research studies….Finally, critics, in turn, critique the criticism. Where will it end? (p. 60).

The case against debriefing

Several researchers and psychological societies have critiqued debriefings. The British Psychological Society (2002) commissioned a review of research examining psychological debriefing with the goal of evaluating the current status and future of psychological debriefing. They reviewed findings from several studies and reports on the effectiveness of psychological debriefing in mitigating acute stress and preventing long-term disorders in both emergency responders and the general population. Several of these studies are presented below.

Rose and Tehrani (2002) noted the inherent desire for those who suffered to be able to tell their story. She also noted the incongruence between claims of success and study results, stating; “Debriefing is at the crossroads. It is clear that with an intervention as popular and widely used as debriefing the outcomes must be carefully evaluated before beneficial claims are made” (p. 6).

Ormerod (2002), in summarizing the current research into the effectiveness of psychological debriefing, concluded that single session debriefing cannot be expected to prevent posttraumatic trauma, but can provide positive support after a critical incident, and meeting the basic needs for safety, restoration, and connection to pre-existing social support systems is extremely important. Perhaps the most important observation in her review of various studies is the need to migrate away from a debriefing framework that assumes that stress is something to be avoided, and move towards acceptance that stress is a naturally occurring phenomenon that can lead to discovery and increased self-reliance (Ormerod, 2002).

Cox (2002) reviewed techniques used to evaluate debriefing effectiveness, dividing the evaluation philosophies into two arenas; quantitative and qualitative analysis. She concluded that there is no clear consensus among experts on the most appropriate way to assess effectiveness, and the current evaluation tools being used are a matter of personal preference rather than a standard measurement method (Cox, 2002). The factors that complicate the ability to make a definitive recommendation on the effectiveness of psychological debriefing include: (a) no standardization of the definitions of stress and treatment modalities, (b) no standardization of treatment approach, (c) varying levels of practitioner qualifications, (d) different types of trauma experienced, (e) different numbers of individuals involved in the debriefing process, (f) variable timing of effectiveness assessments, and (g) different types of measurements taken (Cox, 2002).

Several of the world's foremost researchers on psychological trauma recently published a document that some consider to be the last word regarding psychological debriefing (Bledsoe & Barnes, 2003; Richard Gist, personal communication, June 25, 2004). The paper, titled *Does Early Psychological Intervention Promote Recovery from Posttraumatic Stress?* (McNally, Bryant, & Ehlers, 2003) thoroughly reviewed current research and opinion about the effectiveness of psychological debriefing. They state:

> Psychological debriefing, the most widely used method, has undergone increasing empirical scrutiny, and the results have been disappointing. Although the majority of debriefed survivors describe the experience as helpful, there is no convincing evidence that debriefing reduces the incidence of PTSD, and some controlled studies suggest that it may impede natural recovery from trauma (p.45).

McNally, Bryant and Ehlers (2003) thoroughly reviewed the various studies supporting the Mitchell CISD model, and concluded; “Because of their methodological limitations, these studies fail to provide a convincing case for the efficacy of debriefing to mitigate distress and prevent posttraumatic psychopathology” (p. 61).

Dr. Richard Gist (personal communication, June 25, 2004), a prominent critic of psychological debriefing, strongly suggests that the concept of debriefing does not work in part because it is based on two fundamentally flawed assumptions: (a) a belief that early catharsis about the traumatic event is therapeutic, and (b) education of symptoms is always valuable.

Perhaps McNally, Bryant, and Ehler’s (2003) most insightful statement about the effectiveness of the debriefing model concerns the presumption of efficacy of psychological debriefing in the absence of empirical data supporting the approach by psychological debriefing proponents. In the back and forth debate concerning the validity of debriefing effectiveness studies, they pointedly rebuke the argument that invalid scientific methods were used (McNally, Bryant, & Ehlers, 2003).

> Debriefing advocates seemingly believe that one is entitled to assert the efficacy of debriefing until scientists “prove” that it does not work. This logic is exactly backwards. The burden of proof lies squarely on the shoulders of those claiming the efficacy of a specific protocol. Only when a specific protocol has been shown to be effective is one entitled to complain when researchers depart from it (p. 65).

A large study of the effectiveness of CISD with firefighters was conducted between 1994 and 1997 by Texas A&M University-Commerce on behalf of the United States Fire Administration. A total of 1,890 emergency responders, 1,745 of which were firefighters and

firefighter paramedics, completed a seven part survey (Harris, 1998). The survey was designed to assess social support, coping, posttraumatic stress symptoms of avoidance and intrusion, and symptoms of anxiety and depression as a result of responding to emergency events over the previous three years (Harris, 1998). The results of this study suggest that debriefings tended to resurrect feelings in the firefighters about past emergency incidents that they wanted to forget, and that these intrusive thoughts created a perception that debriefings may be doing more harm than good (Harris, 1998).

In defense of debriefing

In response to the groundswell of criticism about the psychological debriefing model, Jeffery Mitchell, the founder of the International Critical Incident Stress Foundation, has taken a highly visible and assertive role in defending CISD/CISM. In defense of the multitude of studies not supporting CISD/CISM, and papers written about the inefficacy psychological debriefing, Mitchell (2003) emphatically stresses that CISD is not a stand alone process, and has to be used in conjunction with all of the other components in a comprehensive CISM program, and that studies that only assess the outcomes of psychological debriefings are fundamentally flawed because they do not take this holistic approach into account.

Mitchell (2003) further states that most of the negative opinions regarding debriefing studies are based on studies of single session debriefings provided to hospitalized individuals, and should be more accurately described as a form of psychotherapy. Furthermore, these individuals were not traumatized by the same event, therefore the debriefing technique may have been an inappropriate intervention method (Mitchell, 2003).

Perhaps the most strident point Mitchell (2003) makes in defense of debriefing relates to misapplication of debriefing techniques:

> One of the main problems in researching the CISM field is that some researchers mistake crisis intervention services for psychotherapy. In doing so, they create inappropriate expectations for crisis intervention. That core misunderstanding of the very nature of crisis intervention (and CISM) means that CISM…is misapplied to people for whom it was never intended…(p. 2)

Further in defense of CISD/CISM, Mitchell (2003) makes several statements "debunking the debunkers" of CISD/CISM: (a) none of the authors of studies debunking psychological debriefing have ever been trained in CISD/CISM, (b) inappropriate target populations were chosen for study, (c) inappropriate interventions were provided for inappropriate circumstances, (d) researchers mixed terms such that clear interpretation of study subjects and procedures is difficult, (e) major flaws exist in all of the negative outcome studies, (f) randomized controlled trials (RCT's) are not the only way to measure outcomes, and (g) inappropriate outcome measures (e.g., trying to determine if CISD prevented PTSD when PTSD might not be an outcome) were frequently applied.

Mitchell (2003) agreed with critics that more research is needed to support the benefits of CISD/CISM. However, he stresses that the effort should be focused on understanding what interventions should be used for various populations, when they should be used, and by whom.

> Research should focus on what factors make an intervention more likely to succeed. We should also learn what factors are likely to detract from an intervention's success. Once these factors are clarified, every effort should be made to train CISM team members to do the very best things that enhance the potential for successful interventions and reduce the chance of failure (p. 52).

Hokanson and Worth (2000) conducted a large survey to determine if Los Angeles County firefighters felt that stress symptoms were reduced as a result of participating in debriefings, and if these firefighters would recommend the debriefing process to others. At the time of the study, the Los Angeles County Fire Department had conducted over 500 mandatory attendance critical incident stress debriefings since the adoption of the CISD model in 1986 (Hokanson & Worth, 2000). In reviewing the 2,073 surveys, they found that 79% of the participants who had participated in a debriefing would recommend participation to others. Of those who have not participated in a debriefing, 89% stated they would recommend the process to others (Hokanson & Worth, 2000). The researchers chose to describe the 10% decline in the firefighters' willingness to recommend the process after having completed it as an affirmation of the excellent reputation of the department's CISD program. They also concluded these firefighters felt the Mitchell model of CISD was an effective method of mitigating symptoms. However, it is important to note a major limitation of this study. The survey result depended on the individual firefighter's ability to recall past events from as far back to the beginning of their CISD program in 1986 (Hokanson & Worth, 2000). This raises the possibility that they may have incorrectly remembered the efficacy of the program.

Other Group Debriefing Models

The British Psychological Society (2002) and Canterbury and Yule (1999) describe other currently used psychological group debriefing models in addition to the Mitchell model of CISD: (a) Dyregrov's model, (b) Raphael's model, and (c) The Multiple Stressor Debriefing (MSD) model. These models are based, in part, on Mitchell's CISD model, utilizing a structured step-by-step format and are held as formal group meetings shortly after the traumatic event (Rose & Tehrani, 2002).

Dyregrov's model of debriefing was adapted from the Mitchell model for use with a wide variety of trauma-exposed groups beyond the emergency response community, including bank employees, industrial workers, and survivors of disasters (Canterbury & Yule, 1999). Unlike the Mitchell model which focuses on the emergency event, Dyregrov's model also tries to incorporate the participant's experiences immediately prior to the event. It also attempts to reduce the likelihood of participant self-blame, and tries to gather sensory information about what the participant saw, heard, touched, smelled, and tasted (Rose & Tehrani, 2002). It is also interesting to note that Dyregrov has been an active proponent of the Mitchell Model of CISD/CISM, and currently serves as a board member and international liaison for the International Critical Incident Stress Foundation, founded by Jeffery Mitchell.

Raphael's approach to debriefing is less prescriptive than the Mitchell model, and like the Dyregrov model also encourages participants to explore the events leading up to the traumatic event (Rose & Tehrani, 2002). Furthermore, her approach places greater emphasis on the level of preparation or training participants received prior to the event, and asking very direct questions regarding the event, such as: "Was your life threatened?", or "Did you feel good about

anything you did?". This model also encourages participants to consider looking at the feelings of other victims (Rose & Tehrani, 2002).

The third model is the Multiple Stressor Debriefing model, which was created as a result of emergency worker experiences from the 1989 Loma Prieta, California earthquake, and was designed to address stress issues related to long-term disaster operations, as opposed to short-term, localized traumatic events (Canterbury & Yule, 1999). The environment that lends itself to the Multiple Stressor Debriefing model includes a disaster situation that results in multiple contacts with trauma patients, long hours and poor and/or unsafe working conditions, and being away from home for long periods of time (Canterbury & Yule, 1999). This model is currently being used by the American Red Cross to debrief its workers after disaster operations.

The Multiple Stressor Debriefing model is also similar to the Mitchell model, with additional influence from the Raphael model, and involves four stages: (a) disclosure of events, (b) feelings and reactions, (c) coping strategies, and (d) termination (Canterbury & Yule, 1999). One of the main differences between the Mitchell model and the Multiple Stressor Debriefing model is that it does not assume that group members will finish processing their experience at the end of the group session (Armstrong, Lund, McWright, & Tichenor, 1995).

Perhaps the newest group debriefing technique that may be gaining acceptance is the Group Resiliency Briefing ™ model. This model has been adopted by Crisis Management International, an Atlanta based corporation that specializes in dealing with the personnel impacts of business based crisis events. The process specifically avoids potentially painful "rehashing" of graphic incident details, and emphasizes the use of pre-existing individual social support systems, such as family members, friends, co-workers and religious institutions (Slawinski &

Blythe, 2004). The internet-based instructional company, WorkLife Media LCC (2004), describes the motivations and emphasis of the Group Resiliency Briefing ™ approach:

> In place of rehashing and pathologizing, possible reactions to the event are discussed without DSM-IV type labels that might create distress or other paradoxical outcomes with some people. Broad categories of reactions are presented, (e.g., unwanted thoughts) instead of disconcerting labels like flashbacks and nightmares…. The focus of the group is on building from a strengths-based foundation in order for the affected individuals to feel confident in using their own developed coping patterns and skills to manage their reactions to the incident (p. 23).

The objectives of this model are to: (a) guide exchanges within a group toward productive resiliency behavior modeling, (b) provide information and practical support regarding immediate impacts and available resources, (c) assist restoration of work group cohesion, and (d) stimulate a climate between team members of existing work groups to provide an atmosphere of resilience as the recovery process progresses (WorkLife Media LCC, 2004). This is accomplished by: (a) sharing facts, (b) establishing current needs, (c) facilitating sharing about stress coping ideas, (d) explaining common stress reactions, like unwanted thoughts, nervous reactions, and avoidance behaviors, and (e) explaining various techniques that can be used to deal with stress reactions (WorkLife LLC, 2004).

Regardless of which model is used, Canterbury and Yule (1999) cautioned that the various debriefing models suggest lack of agreement on an appropriate early intervention strategy. They stressed, "It might be that these differences simply reflect differences in the perceived needs of the trauma populations to which they were applied, but rigorous evaluation is needed if firm conclusions are to be drawn" (p. 226).

The Unique Personality Traits and Culture of Emergency Responders

Emergency responders likely have unique personality traits and work in a culture that is different from the average citizen who experiences a traumatic event. An understanding of these traits and cultural characteristics is needed to adequately assess the appropriateness of Mitchell's model of CISD/CISM in firefighter crisis intervention. De L Horne (1994) noted that personalities, traits, and personal experiences are key variables that affect stress reactions of emergency workers. For example, emergency service workers may have personality traits such as: (a) need to be in control, (b) obsessive (to do a perfect job), (c) compulsive (repeat same actions), (d) strong desire to be needed, (e) action oriented, (f) high need for stimulation, (g) need for immediate gratification, (h) highly dedicated and motivated, (i) risk taking, and (j) easily bored (Pulley, 2001).

Other researchers noted that firefighters tend to have a higher level of hardiness, which may counteract the risk of PTSD (McNally, Bryant, & Ehlers, 2003, Harris, 1998). Hodgkinson and Stewart (1991) observed that hardiness allows individuals to appraise situational stress more favorably, allowing them to apply more adaptive coping strategies, which can be internally viewed as a challenge and opportunity for personal growth. Further, emergency services

workers who respond to traumatic events can, under certain conditions, view these situations as professionally rewarding (Paton, Smith, & Stephens, 1998).

Lois (2003), who spent six years studying the culture and behaviors of a mountain rescue team, noted the positive energy rescuers gather from their intense and dangerous rescue work. However, in order to perform their jobs these rescue team members also found it vital to keep their emotions in check so they could maintain control over intense situations.

Lois (2003) identified four methods rescuers use to maintain emotional control: (a) anticipating the unknown, (b) suppressing feelings, (c) releasing feelings, and (d) redefining feelings. The concept of anticipating the unknown can be described by the intense training and mental preparation that emergency workers use to prepare themselves for potentially dangerous situations. Examples include reviewing training scenarios and past rescue situations, and thinking about what could be the worst possible situation.

The concept of suppressing feelings was observed because clear thinking and rationale action had to be employed in extremely stressful situations. Lois (2003) described her mountain rescue team experience with this concept:

> Fear, urgency, and emotional upset were some of the powerful feelings that threatened rescuers' control during missions. As a result, members actively worked to suppress them, maintaining a demeanor of "affective neutrality" by focusing on their task and depersonalizing the victims (p. 101).

Releasing feelings is the third concept Lois (2003) identifies as a coping mechanism. Since feelings are generally suppressed while performing emergency activities, team members tended to release pent-up stress by shouting, making jokes, and sharing the emotions they may

have been thinking or feeling during the mission. Specific to the notion of releasing feelings as part of CISD, Lois (2003) notes that her fellow team members did not experience success in reducing stress through CISD:

> ….the group provided a professionally run critical incident debriefing session where rescuers could talk about their feelings after the mission. While these sessions encouraged men (who were the most often involved in such intense missions) to express their feelings, there were only two of these sessions offered in my six years at Peak. As a general rule, Peak's culture did not encourage men to express their feelings after emotionally taxing rescues, a phenomenon this common to American culture in general; women tend to cope with emotionally threatening feelings by crying, while men tend to cope with stress by withdrawing, becoming angry, and using drugs and alcohol (p. 106).

Redefining feelings is the last concept Lois (2003) describes. This concept is shaped around the observation that team members regained control and coped with the emotional aftermath of traumatic incidents by retrospectively redefining and shaping what they experienced. An example of this concept is the notion of mentally replaying an event to see if they could have done anything differently. Other examples include attributing the outcome of events to a higher power (e.g., God's will) or focusing on the positive rather than negative aspects of a traumatic event (Lois, 2003).

Consistent with other research and opinions showing that responding to a crisis can result in personal growth among emergency responders and a feeling of reward (Rose & Tehrani, 2002; Violanti, Paton, & Dunning 2000), Lois (2003) also observed growth responses. She categorized the personal rewards and growth into four categories: (a) increased self-efficacy, increased

feelings of power to affect positive change, (b) development of special bonds with other team members sharing the same experience, (c) moral achievements, the feelings that they are doing something seen as socially admired and morally good, and (d) inspirational and positive lessons and experiences that can be "banked" to draw on during extremely stressful and/or unsuccessful missions.

Western Washington University Associate Professor David Sattler (personal communication, June 21, 2004), a disaster mental health researcher, suggests that, "It's not just the individual that we need to look at, but the social interactions among the team both before and after a critical incident. In short, an understanding of the norms and expectations for group members and group structures is needed." Sattler's observations are corroborated by Lois (2003) and Hobfoll (2001) in their research on the influence of culture and community in stress coping. They note the importance of telling a story of the stressful event, as a way of healing for both the individual and the social group in which the individual belongs.

In reviewing the significance of psychological debriefing for different groups of military combat personnel, Weisaeth (2000) noted the strong culture and relationships among team members of groups that have a high level of training, strong team spirit, and full time preparedness jobs such as firefighting. As a result of this culture, team members have a high degree of stress resilience to emergency work, and carry a moderate to low risk of severe psychological trauma. In postulating why this occurs, Weisaeth (2000) notes the commonality of danger in developing a strong group dynamic that fosters resilience.

> Danger tends to make people seek company and protection in groups. Few life experiences reinforce small-group cohesion as much as a shared feeling of danger…A group provides social support by offering a sense of belonging, inclusion, identity, acceptance, friendship, emotional contact, communication, information, practical help, and social control (p. 49).

He cautions that outside debriefing interventions may disturb the team's normal adaptive process. Bledsoe (2003) corroborates this observation, speculating: "Many feel that CISD sessions replace the already functional collegial and supportive environment present in most emergency organizations when, in fact, forced discussion with outside personnel may inhibit personnel from discussing with colleagues they know and trust" (p. 277).

Weisaeth (2000) also noted a parallel between soldiers in combat and firefighters, explaining that both groups carry out strong social duties in the face of extreme danger, creating an extremely strong bond that carries over into after action discussions among themselves.

Evaluating Coping

Beaton, Murphy, Johnson, Pike, and Corneil (1999) note that: (a) emergency worker occupational demands are unusual, and any assessment of their coping mechanisms needs to take into account their duty-related tasks and exposure to trauma as well as their emergency rescue roles, (b) emergency workers are predominately a self-selected occupational group and are not usually representative of the personality or coping capacity of the general population, (c) most previous studies tended to focus on emergency worker stress reactions to specific large scale disaster events, and (d) some have argued that coping processes may be, at least partially,

unconscious, inaccessible or unknown to self, making it hard to measure with self reporting survey instruments.

As noted earlier in this review, the Conservation of Resources (COR) stress theory is used to understand an individual's reaction to stress. The COR theory relies on the perception of resource acquisition and loss of resources as both an origination of stress, an inoculator, and a coping strategy (Hobfoll, 2001). Furthermore, many post disaster stress studies support COR theory, noting that loss of resources is a better predictor of PTSD and psychological distress than other personal variables (Hobfoll, 2001; Sattler et al, 2002; Smith & Freedy, 2000).

COR theory views, "pro-active coping" as an important strategy to improving individual and/or group resistance to stress (Hobfoll, 2001). Pro-active coping means that individuals strategically position themselves and their resources in an advantageous position to reduce risk and maximize resource utilization, effectively inoculating themselves against major stressors by building up their valuable resources proactively (Hobfoll, 2001). An example of this would be an individual who has strong family support, financial resources, and has intellectually prepared themselves so they can respond appropriately in a crisis situation, and use the existing financial and family support to quickly recover from the event.

In their work assessing coping strategies, Carver, Scheier, and Weintraub (1989) conducted three studies to assess the different ways that people respond to stress. Their results suggest the possibility that personality traits and coping dispositions both have key roles in how people handle situational stress. Furthermore, these aspects tend to complement each other rather than compete with one another (Carver, Scheier, & Weintraub, 1989). The concepts of

emergency worker resiliency and coping related to resource loss and management has only received minimal study (Monnier, Cameron, Hobfoll, & Gribble, 2002).

Literature Review Summary

This author was surprised by the continued polarization and strident arguments concerning CISD/CISM expressed by authors and researchers. It is clear that the debate on the efficacy of psychological debriefing is far from over, and additional research is required.

This review of the current status of scientific study related specifically to firefighter stress and the effectiveness of psychological debriefing showed little consensus on the efficacy of this intervention technique, although the number of studies examining this important issue is small. CISD/CISM, which is used throughout the country, appears to have been created without clinical trials or scientific validation. This review also found that several variations of psychological debriefing methods are being used, with little to no empirical data demonstrating the effectiveness of these methods. However, the Group Resiliency Briefing ™ model appears to address several of the concerns expressed by the various researchers with specific concerns about "traditional" psychological debriefing methods, although it needs scientific study.

Furthermore, this author's review of the research revealed a significant individual variation in coping resources and emotional responses for individuals who experience significant critical incidents. It appears that the unique culture and characteristics or emergency responders may compound this variation. Emergency response teams (firefighters, SWAT, Mountain Rescue) have unique cultures that necessarily rely heavily on social support to inoculate the group members from stress responses. This cultural aspect appears to be a significant factor in

determining the efficacy of psychological debriefing, and must be taken into consideration when conducting psychological intervention research of emergency responders.

PROCEDURE

Definition of Terms

Acute Stress Disorder A mental condition diagnosed when a person develops psychological intrusive, avoidance and arousal symptoms plus three more additional symptoms related to a sense of numbing or detachment, diminished awareness of surroundings, depersonalization, or dissociative amnesia. These symptoms must appear within one month of the traumatic incident, and must be present for a minimum of 48 hours but no more than four weeks (Flannery, Jr., 1999).

Crisis A person's usual coping mechanisms are overwhelmed or fail, and the person feels distress and may have difficulty functioning (Everly & Mitchell, 1999).

Critical Incident An event that overwhelms usually effective coping skills of either an individual or group (Hokanson & Wirth, 2004).

Critical Incident Stress Debriefing A seven-step structured group meeting used to educate and mitigate the potential posttraumatic stress effects of participants who were exposed to a critical incident.

Critical Incident Stress Management A term created by Dr. Jeffery Mitchell to define a comprehensive crisis intervention system consisting of multiple crisis intervention components which span the entire crisis event. These interventions may be applied to individuals, small functional groups, large groups, families, organizations, or entire communities (Flannery Jr. & Everly, 2000).

Factor A statistical term referring to a hypothetical construction that explains correlations among observed variables, such as questionnaire items.

Factor Loading A statistical term indicating a correlation of an item with a factor.

Pathogenesis The origination and development of a disease.

Pearson's Correlation A statistical term indicating the degree of linear relationship between two variables. It ranges from +1.00 to -1.00 A correlation of +1.00 means that there is a perfect positive linear relationship between variables. –1.00 is a perfect negative relationship, and 0.00 refers to a lack of relationship.

Peer debriefers Emergency responders who receive special training to perform with other peer debriefers and professional mental health practitioners in conducting critical incident stress debriefings.

Salutogenesis A term used to describe the causes of overall well-being rather than the etiology of specific disease processes.

Statistical Packet for the Social Sciences (SPSS) A statistical data-analysis software program commonly used in the social sciences as well as in medicine.

Overview of Procedures

The procedures used in this research project included a comprehensive literature review conducted at the National Fire Academy Learning Resource Center in Emittsburg, Maryland in May 2004. A telephone interview was conducted with Dr. Richard Gist to gather the latest information related to the controversy surrounding psychological debriefing.

Dr. David Sattler, Associate Professor of Psychology at Western Washington University (WWU), was frequently consulted to gather additional post-traumatic stress background information, and he assisted in creating the questionnaire and analyzing the results. Dr. Sattler's expertise in the area of disaster mental health and questionnaire administration was critical to the success of this research project.

A Bellingham firefighter/paramedic and a Whatcom County firefighter were interviewed to help develop question topic areas and concepts for the questionnaire. General information related to common firefighter tasks, life experiences, social interactions, job stressors and coping mechanisms were explored during these interviews.

Based on the literature review and interviews, a questionnaire was designed to assess Whatcom County and Bellingham firefighters experiences with the Whatcom County CISM team, exposure to work-related traumatic situations, perceptions of the culture within the fire agencies to express emotion, coping style, distress, and posttraumatic growth as a result of being a firefighter.

Questionnaire Method

The participants were 336 firefighters (302 men, 34 women) from 13 of 17 Whatcom County fire districts, the Lynden Fire Department, and the Bellingham Fire Department. Tables 1 and 2 describe the demographic characteristics of the participants. Most participants were white, married, and had a high school diploma or associates degree. The average age was 38 (*SD*=11.39), and most were volunteer firefighters or firefighter/EMT.

Table1

Demographic Characteristics of Participants (N=336)

Characteristics	*N*	Percent
Gender		
Men	302	90
Women	34	10
Race		
African American	1	.3
Asian American	1	.3
Euro American	316	95
Latino American	5	2
Other	11	3

(table continued)

Characteristics	*N*	Percent
Marital status		
Single	82	25
Married	233	70
Seperated/divorced	17	5
Other	3	1
Education		
Some high school	5	1.5
High School graduate	166	49
Associate degree	94	28
Bachelors degree	58	17
Masters degree	12	4
Doctorate degree	1	.3
Firefighter status		
Paid	96	29
Volunteer	240	71

Table 2

Current Department Position of Participants

Rank	*N*	Percent
Firefighter/EMT	210	64
Firefighter paramedic	27	8
Lieutenant/Captain	60	18
Chief officer	29	9
Other	4	1

Prior to distribution, the questionnaire was reviewed by the Western Washington University Human Subjects Review Committee to ensure the project met ethical standards for research. Based on Committee feedback, minor changes were made to the consent form, and the project was approved.

Because one of the main objectives of survey research is to obtain a representative sample of sufficient size, each of the 19 Whatcom County fire agencies were contacted to schedule a time when firefighters could complete the questionnaire. For departments with volunteer firefighters, the questionnaire was administered during a regularly scheduled drill night. For departments with paid firefighters, the questionnaire was administered during

regularly scheduled training sessions or scheduled meetings. Firefighters typically completed the questionnaire within 25 minutes. The response rate in all locations was excellent and ranged from 98% to 100%.

Upon arrival at the session, either the author or Dr. Sattler reviewed the consent form and answered questions to ensure the participants clearly understood the purpose, confidentiality, and anonymity of the questionnaire. Participants were reminded not to write their name on the questionnaire, or otherwise reveal their identity, and were instructed that if they experienced a stress reaction as a result of previous critical incidents while completing the questionnaire they were to immediately stop and notify their supervisor for follow up.

Questionnaire Materials

A cover letter was attached to the anonymous and confidential questionnaire. It provided informed consent information, described the nature of the project, and provided instructions.

The questionnaire consisted of seven parts. Part one asked for basic demographic information, such as gender, marital status, and education. For parts 2-6, participants used a 5-point scale (1 = not at all to 5= very much) to answer the question. For part 7, participants used a 7-point scale (1= significant decrease to 7= significant increase).

Part two assessed opinions about Critical Incident Stress Debriefing/Management. Participants were asked if they believe Whatcom County Critical Incident Stress Debriefing/Management is effective, and their willingness to participate should the need present itself. Table 3 presents the 11 items. Part three included 15 items that asked participants to define the number of times when they experienced various types of significantly traumatic

emergency situations. Dr. Sattler and the author adapted these items from a questionnaire developed by Monnier, Cameron, Hobfoll, and Gribble (2002). Table 4 presents the items.

Part four was developed to assess attitudes about expressing and suppressing emotions on the job, department culture, and the participant's perceptions of the internal and external factors that influence firefighter stress. The 57 item measure was developed by Dr. Sattler, Dr. Jennifer Lois, and the author. Table 5 presents the items.

Part five asked about coping style. The 14 items were adapted from Carver, Scheier, and Weintraub (1989), and included items asking about problem-focused, emotion-focused, and disentanglement coping styles. Table 6 presents the items.

Part six assessed resource loss, and included 37 items asking about acute stress disorder symptoms, which was based adapted from the work of Sattler et al. (2002). Tables 7 and 8 present these items. Part seven asked about personal growth since becoming a firefighter. These questions were adapted from the questionnaire developed by Calhoun and Tedeschi (1998) and Sattler (2001). Table 9 presents the items.

For formatting and general structure this research paper follows American Psychological Association Publication Manual (fourth edition) as the guiding document.

ASSUMPTIONS AND LIMITATIONS

Two assumptions concerning the questionnaire were made; that participants would understand each question, and that they would answer truthfully. Regarding the limitations, due to scheduling challenges, four of the smallest fire districts did not participate because they had not scheduled a drill session during the time we conducted the study. Firefighters who were absent, due to vacations, illness, shift trades, or other reasons, did not participate. However, the

response rate was excellent, with 98% to 100% of those attending completing the questionnaire. Also, we were unable to determine how these results would have compared to firefighters who quit the department prior to this study, and we had to rely on the firefighter's ability to recall past debriefing and critical incident events, regardless of how long ago they occurred.

RESULTS

Whatcom County CISM Perceptions

Table 3 shows that almost all of the participants (93%) indicated that they believe CISM decreases stress. A surprisingly high number of firefighters (61%) indicated that they have attended at least one debriefing during their firefighting career.

Table 3

Evaluation of Current CISM Program

Variable	[a] Percent	Mean	SD
All participants			
[c]I think CISM does not increase stress.	93	4.2	1.0
If I needed it, CISM would be helpful for me.	88	3.7	1.0

(table continues)

Variable	[a] Percent	Mean	SD
Most firefighters have a positive attitude about CISM	81	3.4	1.0
I have no reservations about participating in CISM	77	4.4	.90
I am familiar with the CISM program	77	3.3	1.2
I would be OK talking about emotions in a group	68	3.1	1.2
Participants who have attended one or more CISD	54	--	--
Number of debriefings attended (at least 1)	61	1.8	2.5
Two weeks post CISM- stress level decrease	[b] 57	3.8	1.7
For people I know, CISM helps reduce stress	55	3.5	1.0
How helpful was CISM for you	42	3.3	1.1
Before attending debriefing-level of stress	35	3.0	1.1

[a] Persons who answered from *somewhat* (3) to *very much* (5).

[b] Persons who answered that their stress level had significantly decreased (1) up to neutral (5) after attending a debriefing.

Critical Incident Experience

Participants estimated the number of times they have experienced various critical incidents during their firefighter career. Not surprisingly, most have dealt with fatalities, an incident with possibility of child injury or death, significant violent situations that required law enforcement assistance, treating a friend or family member, and having been verbally or physically threatened at the incident scene (see Table 4).

Table 4

Critical Incident Experiences of Participants

Experience	*N*	Percent	[a] Median
Involved in treating one or more fatalities	273	89	5.0
Involved in an incident with possibility of child injury or death	238	76	2.0
Involved in a violent situation on an incident-PD assist	237	75	2.0
Involved in treating a friend or family member	214	67	1.0
Involved in treating a seriously injured or killed child	214	68	1.0
Direct threat-verbal/physical while on scene	191	59	1.0
Fellow FF's real possibility of duty related injury/death	189	61	1.0
Prolonged extrication of seriously injured patient(s)	173	54	1.0
Real possibility of duty related serious injury	168	55	1.0
Close contact with mutilated/burned patient(s)	159	49	.00

(table continues)

Experience type	*N*	Percent	[a] Median
Direct exposure to hazardous materials	140	51	.00
Involved in a child abuse incident	119	59	.00
Body retrieval	112	63	2.0
Critical/negative media coverage	107	34	.00
Serious line of duty injury	17	8	.00

[a] Median was selected as the measure of central tendency because it is less influenced by extreme scores.

Controlling Emotions

The SPSS program was used to examine the relationship among the three coping styles (emotion-focused, disengagement, and problem-focused) with changes in stress level two weeks after participation in a CISM debriefing. A decrease in stress two weeks following participation in CISM was weakly associated with emotion-focused coping, $r = -.19$, $p < .05$. Change in stress level was not associated with either disengagement ($r = .00$, $p > .05$) or problem-focused ($r = -.13$, $p < .10$) coping styles.

Table 5 presents the factors, factor loadings, mean, and standard deviations for the 32 item measure assessing attitudes about expressing and suppressing emotions on the job and culture within the department. A factor loading of less than .50 was determined to be too weak for the purposes of this research. The means show that Whatcom County firefighters feel they need to suppress their emotions during emergency situations, enjoy the feeling of having control

over emergency situations, and must manipulate their display of emotions when working with victims. They also struggle somewhat with maintaining a balance between home and firefighter job duties, value the team approach to dealing with emergencies, and acknowledge the value in releasing and discussing emotions after a critical incident.

Table 5

Factor Loadings, Means, and Standard Deviations of Controlling Emotions and Situations

Variable	[a] Factor Loading	*M*	*SD*
Emotions			
Not appropriate to show pride for effort	.70	3.0	1.3
Firefighters who lose composure are not reliable	.60	3.0	1.3
Emotions on the job are dangerous	.60	2.9	1.2
Team members have expectations about expressing emotions after a call	.56	2.4	1.0
Expressing personal problems brings unwanted attention	.54	2.4	1.2

(table continues)

Variable	[a] Factor Loading	*M*	*SD*
Negative performance			
Expressed emotion during a call may result in inability to control emotions at next call	.87	2.0	1.1
Expressed emotion could interfere on next call	.83	2.0	1.1
Recalling disturbing images results in not performing job well	.80	2.5	1.4
Control over situations			
Like the challenge of problem solving	.79	4.1	.90
Like the feeling of control over hectic situations	.67	3.6	1.2
Enjoy unpredictability of emergencies	.60	3.5	1.2
Expressing emotion with victims			
Must control emotions to get victim compliance	.73	4.0	.92
Don’t discuss injury severity with patient to avoid shock	.64	2.9	1.3

(table continues)

Variable	[a] Factor Loading	*M*	*SD*
FF should appear confident and in control when speaking with victims	.62	4.6	.55
Sometimes cannot express sympathy to avoid interference with job duties	.60	2.6	1.2
Balancing work and home			
Difficult to balance work with home life	.86	2.5	1.2
Commitment to department interferes with home responsibilities	.85	2.4	1.2
Pushing physical/mental limits			
Important to focus on team, not individual	.61	4.1	1.0
Push yourself physically/mentally to the edge	.59	3.4	1.1
Sometimes worry best effort won't be enough	.57	3.0	1.2
Expressing emotions			
Cry to release overwhelming emotion	.76	2.0	1.0
Like to talk about feelings and thoughts after a stressful call	.73	2.9	1.1

(table continues)

Variable	[a] Factor Loading	*M*	*SD*
Miscellaneous			
Ability to manage emotions critical to work	.49	4	1.0
Felt pressure to appear mentally strong	.37	3	1.3
During incidents, best to remain detached	.32	3	1.3
Fear on call can hinder performance	.37	3	1.2
Like challenge of relying on ability to problem solve	.11	4.1	.90
We express feelings of success after a call	.45	3.1	1.2

[a] Based on participants who indicated from *somewhat (3)* to *very much (5)*.

Coping

Table 6 presents the items asking about coping styles. It shows that the vast majority of the participants take positive steps to coping with stress, with 88% deciding to look for something positive when they experience stress events, and 86% taking action to solve the problem. These findings show most participants use a problem-focused coping style.

Table 6
Coping Action Steps

Variable	[a] Percent	*M*	*SD*
Look for something good in what happens	88	3.7	.90
Take action to solve a problem	86	3.6	.90
Get advice from someone about what they did	76	3.2	1.1
Make a plan of action	72	3.3	1.1
Talk to someone about how I feel	67	3.1	1.1
Learn to live with the problem	67	3.1	1.2
Put aside activities to concentrate on problem	64	2.9	1.1
Turn to activities or work to distract me	63	2.9	1.1
Let my feelings out	59	2.8	1.0
Seek God's help	52	2.8	1.5
Hold off doing anything until situation permits	48	2.5	1.0
Admit I cannot deal with it and quit trying	13	1.2	.60
Drink alcohol or use drugs to distract	7	1.0	.70
Refuse to believe that it happened	3	1.2	1.0

[a] Percent of participants who indicated from *somewhat (3)* to *very much (5)*.

Resource Loss

Tables 7 and 8 quantify the questionnaire results of participants' contemporary resources and resource loss within the past 30 days. The results show, consistent with the findings in Table 6, that Whatcom County firefighters maintain significant internal and external resources to deal with stress and loss. Strong internal feelings or life purpose (92%), family support and stability (90%), and good physical health all indicate significant hardiness. Lastly, not shown in the table is that there is not a significant difference in number of stress symptoms reported by those who have or have not attended a Critical Incident Stress Debriefing, F (1,298) = .29 P >.05.

Table 7

Available resources

Variable	[a] Percent	*M*	*SD*
Feeling my life has purpose	92	4.2	.90
Good physical health	92	3.9	.80
Having a sense of optimism	91	3.8	.90
Feeling close to one or more family members	90	4.1	1.0
Family stability	90	4.2	1.0
Stable employment	90	4.2	1.0
Motivated to get things done	89	3.8	.90

(table continues)

Variable	[a] Percent	*M*	*SD*
Feeling like I am accomplishing my goals	88	3.7	.90
Feeling valuable to others	87	3.6	.90
Feeling companionship	87	3.9	1.1
Good financial status	86	3.5	1.0
Having a sense of humor	86	4.2	.80
Feeling sense of safety and security	83	3.9	.90
Feeling close to at least one friend	82	3.9	1.2
Having adequate free time with loved ones	82	3.4	1.0
Feeling of control over own life	77	3.7	1.0
Feeling support from co-workers	75	3.6	1.0
Feeling I am doing the right things in life	74	4.1	.80
Having adequate time for sleep	64	3.0	1.1
Having adequate free time	64	3.1	1.2

[a] Percent of participants who indicated from *somewhat (3)* to *very much (5)*.

Table 8

Distress Symptoms

Variable	[a] Percent	*M*	*SD*
Difficulty in doing work or other things to be done	49	1.7	.90
Feeling irritable or on edge	45	1.7	1.0
Having difficulty sleeping	23	2.0	1.0
Feeling time is standing still	22	1.7	1.0
Getting upset/angry easily	18	1.8	1.0
Slow to react to people around me	16	1.7	.80
Feeling anxious	16	1.7	.90
Feeling emotionally numb	14	1.5	.80
Feeling mixed up or disoriented	14	1.6	.80
Having trouble feeling my emotions	12	1.5	.80
Not feeling like myself	10	1.4	.80
Trying not to talk about stressful emergency event	9	1.4	.80
Intrusive thoughts about emergency incident	9	1.4	.80

(table continues)

Variable	[a] Percent	*M*	*SD*
Having difficulty remembering important things about a stressful event	8	1.4	.70
Avoiding things that remind me of emergency incident	7	1.3	.70
Having nightmares	5	1.2	.60
Getting upset when exposed to emergency incident reminders	4	1.2	.60

[a] Percent of participants who indicated from *somewhat (3)* to *very much (5)*.

Posttraumatic Growth

The last part of the questionnaire assessed post-traumatic growth. Table 9 shows that almost all of the participants (91%) felt that they have experienced personnel growth as a result of being a firefighter, and over three-quarters (78%) determined that they are emotionally stronger as a result of their experiences.

Table 9

Posttraumatic Growth Assessment

Variable	[a] Percent	*M*	*SD*
Having grown as a person as a result of being a firefighter	91	6.0	1.1
Discovering I am emotionally stronger than I thought I was	78	5.5	1.1
Having new priorities about what is important in life	76	5.4	1.2
Feeling that my life has purpose	72	5.6	1.4
Having new respect for people in the community	71	5.3	1.4
Feeling closer to one or more family members	64	5.2	1.3
Appreciating each day more	62	5.5	1.2
Observing my religious faith	34	4.8	1.5

[a] Percent of participants who indicated from *a little increase (2)* to *significant increase (5).*

DISCUSSION

The first two research questions asked if the Mitchell model of CISD is accepted as a model for critical incident stress management, and what alternative models exist. The findings of the literature review clearly reveal the continued controversy surrounding the efficacy of psychological debriefing, specifically the Mitchell debriefing model.

Like psychological sciences experts, the fire service also continues to struggle with determining the best approach to provide psychological support to its personnel. The implications of continued use of this model are addressed in the rest of this discussion below.

The findings of the survey address the third research question and provide important information about the individual characteristics and culture of Whatcom County firefighters and attitudes toward and the effectiveness of Critical Incident Stress Debriefing.

The survey results indicate that a significant majority of Whatcom County firefighters are extremely hardy, have strong social support structures, and view their stress experiences as opportunities for personal growth. Because of the very high level of hardiness and resiliency of our firefighters, it presents a challenge in empirically evaluating the effectiveness of any change to the method used in providing psychological support for critical incidents.

The Personality and Culture of Whatcom County Firefighters

The results of this project reveal several key personality traits of firefighters and the culture of the Whatcom County fire service that should be considered in charting the future of critical incident psychological support for the fire service.

Controlling emotions and coping

The results clearly indicate that the majority of Whatcom County firefighters believe they must exert a significant amount of control over their emotions while operating in the emergency environment. This suggests that firefighters are adept in routinely using repressive coping skills to deal with stressful events. This may seem like a common sense observation. Emergency responders are expected to control their emotions to effectively operate in high stress environments. Yet, it appears that this coping style has not been adequately considered in previous prescriptive methods in addressing posttraumatic stress. How might this consistent experience with controlling emotion match with the CISD model that encourages responders to talk and express their feelings after a critical incident?

Almost one-third of Whatcom County firefighters have reservations about talking about their emotions in a group setting, which may reflect the inherent repressive coping styles of many firefighters. In addition, of those who had attended at least one debriefing, only 42% felt that the debriefing was helpful. Further, a statistical test examining the relationship between three basic coping styles (emotion-focused, problem-focused, and disengagement), with reports of the effectiveness of CISD, showed a weak correlation between a decrease in stress two weeks post debriefing for individuals who were determined to use an emotion-focused coping style. This finding suggests that CISD may be most effective for persons who use an emotion-coping style. However, most firefighters reported using the problem-focused coping style.

Taken together, the findings raise important questions about the use of CISD in Whatcom County, especially how helpful this type of debriefing is. Clearly, another method of

psychological support needs to be considered that addresses the hardy individual characteristics, and social support networks of firefighters.

In exploring the issue of psychological debriefings and coping styles, Wesseley and Deahl (2003) present opposing views. In presenting the argument against debriefing Wesseley focused on individual coping styles, and how for some individuals psychological debriefing may hinder their ability to effectively deal with a situation using their normal coping style:

> Perhaps for some not talking is indeed appropriate-defense mechanisms may serve a purpose, and it is not always "better out than in." Talking to a stranger, whom one has never met before and will not meet again, may impede the normal processes of recovery that utilize one's own social networks-family, friends, general practitioner and others who may be better able to place the trauma in the context of one's own life (p. 12).

Another key finding from the survey is that most firefighters in Whatcom County take positive actions to cope with stress after a traumatic event. Over 80% of the firefighters take some sort of action to reduce their stress. Almost 90% take a positive view in coping with stress, and almost 80% solicit advice from someone about what they did. Contrary to the definitions of crisis and critical incident as defined in the procedures section of this paper, most of the surveyed firefighters appear to take positive steps to deal with stress, and do not appear to have been subject to feeling overwhelmed or disabled after significant traumatic events, irregardless of whether they participated in a CISD or not. These findings are consistent with the COR theory (Hobfoll 2001) as defined in the literature review, and suggests that a hardy resource base and pro-active coping is a key strategy used to build up immunity to traumatic emergency events.

Firefighter hardiness and resources

The results of the survey also reveal that Whatcom County firefighters view themselves as an extremely hardy group, and possess significant internal and external resources to deal with stress resulting from traumatic events. Strong family support, good physical health, and a strong sense of life purpose, are all dominate resource factors in their lives. Conversely, less than 10% noted they have intrusive thoughts about an emergency incident or get upset when exposed to past emergency incident reminders.

This finding is consistent with the findings of Harris, Baloglu, and Stacks (2002). Their research of the effectiveness of psychological debriefing of firefighters in the geographic Federal Emergency Management Agency Region VI revealed an overall positive and hardy work group, with very few subjects demonstrating anxiety and depression symptoms.

Intuitively, it seems to make sense that this high level of hardiness in firefighters can be attributed to their work exposure to traumatic incidents and their years of service. The common perception is that firefighters who "can't cut it" usually leave the service for other pursuits. However, the present study, as well as other research into the coping responses and stress symptomatology of urban firefighters revealed no direct correlation (Beaton et al., 1999) between years of service and stress symptomatology.

Another potential explanation for the relationship between hardiness and distress may be found in Hobfoll's (2002) observation that resources tend to cumulate or may be deficient in overlapping areas, known as "resource caravans." For example, individuals with high self-esteem will also possess a stronger sense of mastery and have better functioning social support systems" (Hobfoll, 2002, p. 312). The model also suggests that societal and cultural factors can

influence the type and quality of the resources an individual values and obtains. One could argue that the firefighter selection process and strong supportive team environment of the fire service strongly influences resource collection, and helps inoculate firefighters from the effects of traumatic emergency events.

The high level of hardiness of Whatcom County firefighters and the available resources they use to deal with stressful events may be a factor in explaining why the number of CISM debriefing requests has dropped recently.

It is worth noting that the level of hardiness noted in Whatcom County firefighters results in a "ceiling effect" that presents challenges in future empirical research of the effectiveness of psychological debriefings or other psychological intervention techniques of this group. That is, given the high level of resources and hardiness which serve to counter stress effects, it would be difficult to show the effectiveness of almost any program designed to reduce stress, above and beyond the existing coping resources. It may be for this key factor that studies have such difficulty showing "an effect" for CISD. It must be noted however, that there may be positive outcomes of CISD or other programs that are difficult to assess quantitatively. For example, in conversations with the Whatcom County CISM team, several providers agreed that there are many intangible yet helpful effects. One member noted that a firefighter had felt guilty about this role in an incident. This feeling of guilt may not have resulted in any mental health issue, but it was upsetting. The provider was able to help reframe the way the firefighter thought about the incident by pointing out that he had done all anyone could possibly do. The firefighter reported to the provider later that this reframing, or thinking about the event in different terms, reduced his distress and concerns about the situation.

Posttraumatic growth

The results clearly show that the participants believe their firefighting experience has resulted in significant personal growth and increased emotional strength. This finding is consistent with other studies showing that posttraumatic growth is a common outcome of being exposed to a traumatic event (Ormerod, 2002; Sattler, 2003). In their review of posttraumatic growth of trauma survivors, Tedeschi and Calhoun (2004) corroborate this finding, stating:

> The kinds of positive changes individuals experience in their struggles with trauma are reflected in models of posttraumatic growth that we have been building…and in a measure of posttraumatic growth that we developed based on interviews with many trauma survivors. These changes include improved relationships, new possibilities for one's life, a greater appreciation for life, a greater sense of personal strength and spiritual development. There appears to be a basic paradox apprehended by trauma survivors who report these aspects of posttraumatic growth: Their losses have produced valuable gains (p. 7).

The questionnaire results clearly support this opinion, and suggest that the potential for posttraumatic growth in emergency responders should be a primary consideration in any future discussions to fundamentally change the county CISM program.

The Status of Whatcom County CISM

The questionnaire results clearly show that the majority of Whatcom County firefighters are at least somewhat familiar with and have a positive attitude towards the Whatcom County CISM program. These findings are consistent with studies in other locations showing that

firefighters, for the most part, appreciate the support provided by debriefings and the ability to utilize this resource if needed (Harris, Baloglu & Stacks, 2002; Hokanson & Worth, 2000).

Debriefing programs are extremely popular, motivated in no small part to the intrinsic need to do something when disaster strikes (Ormerod, 2002; Wessely & Deahl, 2003). Although the Whatcom County CISM team conducted very few debriefings and no educational sessions over the past two years, the program's reputation continues to be highly valued and maintained throughout the county fire service. This continued support of the program, even though it has not been actively involved recently, may indicate that the participants also feel the need to support programs that seek to help during a crisis situation. Wessely & Deahl (2003) present information consistent with the results regarding perceived helpfulness of the Whatcom County CISM program. Furthermore, he stresses caution in making drastic changes to existing programs without evaluating the potential perceptions of the change:

> Whether or not psychological debriefing reduces long-term morbidity, several studies report that individuals find it subjectively helpful at the time (although this is another outcome that has not been properly studied)…Abandoning psychological debriefing sends out the dangerous message that doing nothing for individuals following traumatic events is acceptable (p.14).

The results of the present survey also showed that participants (93%) feel that CISM does not increase stress. The responses to whether the participants felt that CISM would be helpful for them revealed an 88% positive answer. These high results further demonstrate the collective feeling that CISM is an appropriate tool to help firefighters during crisis.

It seems reasonable that pre-event or ongoing (e.g. yearly) CISM education may be prudent to ensure that Whatcom County firefighters learn about stress issues and steps they can take to deal with and manage stressful situations at home and work. This is especially important if any significant changes are implemented to the CISM program. This approach is consistent with the preparatory coping culture of emergency responders as described by Lois (2003) in this author's literature review. She notes the importance emergency responders place on trying to learn as much about the unknown as possible, and master needed skills prior to the event (Lois, 2003).

Violanti et al. (2000) notes the importance of taking a prevention/education approach in fostering resiliency in emergency responders:

> While it is essential to have in place interventions capable of meeting the needs of those who do experience posttraumatic stress, it is important that we do not focus exclusively on pathological outcomes, nor should we wait until exposure has occurred before intervening (p. 206).

This author is sensitive to the potential for inherent resistance in adopting a more preventative approach to posttraumatic stress and other stress-related outcomes by fire agencies in Whatcom County. Simply waiting until a significant critical incident occurs, and then providing critical incident defusing and debriefings is, and has been, the simplest and least

intrusive method of psychological support. Significant time and effort must be expended to provide on-going stress education to county firefighters. This is made more complicated by the on-going controversy concerning the most appropriate approach to providing this education. Violanti et al. (2000) suggest that a paradigm shift needs to occur, moving posttraumatic interventions from a pathological perspective to more of a salutogenic perspective:

> Pursuing salutogenic goals will require not just a new way of thinking about an old problem…..the popularity of pathogenic models can be attributed to their low cost and ease of administration. Pursuing a salutogenic alternative will require organizational and attitudinal change and a high level of commitment to the protection of mental health (p. 208).

Empowering this organizational and attitudinal change is a significant challenge. The current Critical Incident Stress Debriefing/Management program is provided without cost to county emergency response agencies, and very little effort has been expended to support the program and its volunteer staff with training or additional resources. There has been little to no effort over the past several years to provide outreach education to the response agencies, and there appears to be little motivation on the part of the agencies to support this approach.

Another perspective that supports the statement above is the view that a broader culture change may have rendered the current form of debriefing obsolete. The fire service's strong team support environment- the "second family"- lends itself to the informal awareness of those suffering, increasing hardiness, and makes it much more difficult to have a significant impact with formal psychological debriefing techniques (Rose & Bisson, 1998). It needs to be noted

that this team environment is a coping resource that is not available to the general public, which may contribute to the high level of hardiness found in Whatcom County firefighters.

Regardless of this hardiness and available resources, given the strong local support for the CISM concept, it is clear that these firefighters have an expectation that the CISM program is both effective and available to support them in times of crisis. This needs to be considered in any future changes to the existing CISM program.

The Appropriate Debriefing Model

The literature review in this project identified several methods for conducting psychological debriefings. As noted in the literature review, the Mitchell model is the most prevalent debriefing technique currently used. However, the preponderance of research of psychological debriefing casts a shadow over the efficacy and future of this type of prescriptive debriefing method.

Four out of the five types of psychological debriefing models described in the literature review all appear to be a modified Mitchell model type of debriefing technique. Even though each has its own approach to the sequence of steps, all try to draw out experiences and feelings from the participants. Some experts feel this approach places too much emphasis on re-exposure to the critical incident, resulting in emotional overload (Rose & Tehrani, 2002). As explored in the literature review, questions are now being asked about the effectiveness of this approach. Rose and Tehrani (2002), in their assessment of the most common psychological debriefing models noted this quandary:

> One of the central questions is whether we, as mental health professionals, should be encouraging those exposed to traumatic events to use the traditional ways of 'telling' such as using social support offered by friends, colleagues and family or be encouraging the use of psychological debriefing as a formal intervention (p. 6).

Orner et al. (1999) explored the coping and adjustment methods used by emergency response staff, and discovered that the staff relied on specific techniques, such as confronting what happened, re-asserting a sense of control, and letting time lapse. Also, 79% of the staff endorsed peer support and 66% endorsed interaction with friends to help mitigate stress. Only 41% thought outside professional involvement would be helpful. These observations appear to validate the work of Rose and Bisson (1998) in that peers are relied upon routinely in emergency services to provide emotional support. Supporting this informal culture of "second family" emotional support is critical to maintaining the mental well-being of our firefighters.

The recently developed Group Resiliency Briefing ^{TM} model appears to have the potential to improve the efficacy of psychological support. While this model is new, making it "unproven" from an empirical standpoint, it is based on a salutogenic approach to stress management, and recognizing resiliency as a key internal resource that should not be underestimated. In justifying the Group Resiliency Briefing ^{TM} model, WorkLife LLC (2004) notes:

> A resiliency model views various forms of subjective discomfort as early signs of disequilibrium, preceding what will ultimately become healthy adaptation and accommodation (rather than as "symptoms" indicating maladjustment and prognostic of disorder and dysfunction). These disparities have contributed to sometime-remarkable

differences in estimation of pathology following traumatic exposure. They have also fueled substantially different approaches to the nature, scope, visibility, and intrusiveness of interventions advocated (p. 3).

Addressing the specific crisis response needs of a hardy group of firefighters with an approach based on fostering and maintaining inherent resilience appears to make much more sense than the current approach that assumes that responding to a serious crisis event is always a "bad thing".

Discussion Summary

The results of this project clearly indicate that a "fresh look" at the Whatcom County CISM program is needed. The firefighters clearly appreciate, and expect, the services provided by the CISM team. However, it is also clear that the current approach in delivering CISM services may not be appropriate for the entire group, and the current lethargy of the CISM team is, in all likelihood, a result of this incongruence. It is also exacerbated by the fact that the CISM team only provides defusings and debriefings. Little to no effort has been focused on pre-event education, continuing education, or any of the other aspects of the Mitchell CISM approach.

This research project clearly identified concerns about psychological debriefing in general, and the Mitchell model specifically. These concerns, coupled with the questionnaire results, clearly show that given the inherent hardiness and resiliency of county firefighters, another approach needs to be explored that more appropriately provides psychological support to county emergency responders.

This information needs to be shared with each county emergency response agency that participates in the program. These agencies will need to be active participants in evaluating and changing the current program, and commit to supporting their personnel through educational efforts and participation in the change process.

RECOMMENDATIONS

The City of Bellingham, in its role as the primary support agency for the Whatcom County CISM program, needs to facilitate a planning process with representatives from all of the county emergency response agencies that participate in the CISM program, review the current CISM approach and findings of this study, and determine if the Group Resiliency Briefing ™ model is a more appropriate tool to provide posttraumatic stress support services for all Whatcom County emergency responders. However, as seen with the current controversy surrounding CISD/CISM, caution should be used in considering any program that does not have scientific evidence supporting its effectiveness.

Until such time as a new model is adopted, the current approach to providing CISM debriefings should continue to avoid any perceived lack of support by the emergency responders. Lastly, more research is needed to examine which firefighter personality traits are associated with increased vulnerability to distress.

REFERENCES

Armstrong, K.R., Lund, P.E., McWright, L.T., & Tichenor, V. (1995*). Multiple stressor debriefing and the American Red Cross.* Retrieved September 10, 2004, from http://www.naswdc.org/pressroom/evnts/911/armstrong.asp

Beall, L.S. (1997). Post-traumatic stress disorder: A bibliographic essay. [Electronic version]. *Choice. 34(6).* Retrieved June 13, 2004, from http://www.lib.auburn.edu/socsci/docs/ptsd.html

Beaton, R., Corneil, W., Johnson, C., Murphy, S., Pike, K. (1999) Coping responses and posttraumatic stress symptomatology in urban fire service personnel. *Journal of Traumatic Stress, 12 (2),* 293-307.

Bledsoe, B.E., Barnes, D. (2003). Beyond the debriefing debate: What should we be doing? *Emergency Medical Services, 32(12),* 60-68.

Bryant, R.A., Ehlers, A. & McNally, R.J. (2003). Does early psychological intervention promote recovery from posttraumatic stress? *Psychological Science In the Public Interest, 4 (2),* 45-79.

Canterbury, R. & Yule, W. (Ed.). (1999). Debriefing and crisis intervention. *Post-Traumatic Stress Disorders: Concepts and Therapy.* New York: John Wiley & Sons.

Carver, C.S., Scheier, M.F. & Weintraub, J.K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56 (2),* 267-283.

Cox, S. J. (2002). Tools and techniques for evaluating psychological debriefing. *The British Psychological Society.* Retrieved June 13, 2004, from http://www.bps.org.uk

De L Horne, D. (1994). *Coping with Trauma, The Victim and the Helper*. Brisbane: Australian Academic Press.

Devilly, G.J. & Cotton, P. (2004). Caveat emptor, caveat venditor, and Critical Incident Stress Debriefing/Management. *Australian Psychologist, 39(1),* 35-40.

Everly Jr., G. & Mitchell, J. (Ed.). (1999). A new era and standard of care in crisis intervention. *Innovations in Disaster and Trauma Psychology* (Vol.2). Ellicot City, MD: Chevron Publishing Corporation.

Flannery Jr. R. (1999). Psychological trauma and posttraumatic stress disorder: A review. *International Journal of Emergency Mental Health, 2,* 135-140.

Flannery Jr., R., Everly Jr., G., (2000). Crisis intervention: a review. *International Journal of Emergency Mental Health. 2 (2),* 119-125.

Harris, M. & Stacks, J. (1998). *A three year five state study on the relationships between critical incident stress debriefings, firefighters' disposition, and stress reactions* (RFA EMT-96-RP-009). Commerce, TX: Texas A&M University.

Harris, M.B., Baloglu, M. & Stacks, J.R. (2002). Mental health of trauma-exposed firefighters and critical incident stress debriefing. *Journal of Loss and Trauma, 7,* 223-238.

Hobfoll, S.E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review. 50 (3),* 337-421.

Hobfoll, S.E. (2002). Social and psychological resources and adaption. *Review of General Psychology, 6,* 307-324.

Hodgkinson, P.E. & Stewart, M. (1991). *Coping with catastrophe: A handbook of disaster management.* New York: Routledge.

Hokanson, M., Wirth, B. (2000), The critical incident stress debriefing process for the Los Angeles County Fire Department: Automatic and effective. *International Journal of Emergency Mental Health, 2 (4),* 249-257.

Lazarus, R.S. & Folkman, S. (1984). *Stress, appraisal, and coping.* New York: Springer.

Lois, J. (2003). *Heroic Efforts: The emotional culture of search and rescue volunteers.* New York: University Press.

Mitchell, J.T. (1983). When disaster strikes…the critical incident stress debriefing process. *Journal of Emergency Medical Services, 8(1).* 36-39.

Mitchell, J.T. (2003). Crisis Intervention & CISM: A Research Summary. *International Critical Incident Stress Foundation.* Retrieved July 14, 2004, from www.icisf.org/articles/cism_research_summary.pdf

Mitchell, J.T. (2003). Crisis Intervention & Critical Incident Stress Management: A defense of the field. *International Critical Incident Stress Foundation.* Retrieved July 14, 2004, from www.icisf.org/articles/acrobat%20Documents/cism_defense_of_field.pdf

Monnier, J., Cameron, R.P., Hobfoll, S. & Gribble, J.R. (2002). The impact of resource loss and critical incidents on psychological functioning in fire-emergency workers: A pilot study. *International Journal of Stress Management,* 9 (1), 11-29.

National Fire Academy. (2000). *Executive Leadership Student Manual,* 4th ed. Federal Emergency Management Agency, United States Fire Administration. Emmitsburg, MD: Author.

Ormerod, J. (2002). Current research into the effectiveness of debriefing. *The British Psychological Society*. Retrieved June 13, 2004, from http://www.bps.org.uk

Orner, R.J., Avery, A. & King, S. (1999). *An evidence based rationale for early intervention after critical incidents.* Paper presented at European Regional Conferences on Early Interventions and Psychological Debriefing, Aberdeen, Scotland.

Paton, D., Smith, L.M. & Stephens, C. (1998). Work-related psychological trauma: A social psychological and organizational approach to understanding response and recovery. *The Australasian Journal of Disaster*. Retrieved July 20, 2004, from http://www.massey.ac.nz/~trauma/issues/1998-1/paton1.htm

Pulley, S. (May 31, 2001). Critical Incident Stress Management. *eMedicine.* Retrieved July 15, 2004, from http://www.emedicine.com/emerg/topic826.htm

Rose, S. & Tehrani, N. (2002). History, methods and development of psychological debriefing. *The British Psychological Society.* Retrieved June 13, 2004, from http://www.bps.org.uk

Rose, S. & Bisson, J. (1998). Brief early psychological interventions following trauma: A systematic review of the literature. *Journal of Traumatic Stress, 11,* 697-710.

Sattler, D.N. (2001). Resiliency, posttraumatic growth, and psychological distress after the attacks on America. *Beyond September 11th: An account of post-disaster research* (Special report No. 39). Boulder, CO: Natural Hazards Research and Applications Information Center.

Sattler, D.N., Preston, A.J., Kaiser, C.F., Olivera, V.E., Valdez, J. & Schlueter, S. (2002). Hurricane Georges: A cross-national study examining preparedness, resource loss, and

psychological distress in the U.S. Virgin Islands, Puerto Rico, Dominican Republic, and the United States. *Journal of Traumatic Stress*. *15* (5), 339-350.

Slawinski, T.T. & Blythe, B.T. (2004). When doing the right thing might be wrong. *Crisis Management International.* Retrieved on September 22, 2004, from http://www.cmiatl.com/news_article55.html

Stroebe, M. & Stroebe, W. (1995). *Social Psychology and Health*. New York: Brooks/Cole Publishing.

Tedeschi, R.G., Calhoun, L. (2004). Posttraumatic growth: A new perspective on psychotraumatology. *Psychiatric Times.* Retrieved July 15, 2004, from http://www.psychiatrictimes.com/p040458.html

Vilolanti, J.M., Paton, D. & Dunning, C. (Eds.). (2000). *Posttraumatic Stress Intervention.* Springfield, IL; Charles C. Thomas LTD.

Weisaeth, L. (2000). Briefing and debriefing: Group psychological interventions in acute stressor situations. B. Raphael & J.P. Wilson (Eds.), *Psychological debriefing: Theory, practice and evidence* (pp. 43-56*)*. New York: Cambridge University Press.

Wessely, S. & Deahl, M. (2003). Psychological debriefing is a waste of time. *British Journal of Psychiatry, 183*, 12-14.

WorkLife Media LLC. (2004). The resiliency approach to early crisis intervention. (n.d.). Retrieved September 22, 2004, from http://learn.worklifemedia.net

APPENDIX

SURVEY

Whatcom County Firefighters Critical Incident Stress Management Evaluation Project

Project Director
Chief Bill Boyd
Bellingham Fire Department
Bellingham, WA 98225

Project Director
Dr. David Sattler
Western Institute for Social Research
Western Washington University
Bellingham, WA 98225-9089

Thank you for participating in the Whatcom County Firefighters Critical Incident Stress Management Evaluation Project. The purpose of this important project is to help improve how services are provided to all Whatcom County firefighters and to better understand stress responses to emergency calls. Bellingham Fire Chief Bill Boyd and Dr. David Sattler are conducting the project. Chief Boyd is conducting this project as part of a research project for the U. S. Fire Administration's Executive Fire Officer Program. Dr. Sattler is a disaster researcher with extensive experience conducting survey projects worldwide.

It will take about 20 minutes to complete this questionnaire, which asks about your experiences as a firefighter. We would be pleased to provide additional explanation of the project at your request. Your responses on the questionnaire are completely anonymous and confidential, and data will be reported only in aggregate form. **Do not write your name on the questionnaire**.

Participation is entirely voluntary, and there will be no penalty if you decide not to participate. You may withdraw at any time without penalty if you so choose. By completing the survey, some persons may be reminded about unpleasant memories of emergency calls. If so, please notify your supervisor who can then put you in touch with your department's appropriate mental health provider.

By participating in the project, you will be helping to increase our understanding about how firefighters react to emergency calls and to improve how critical incident stress management services are provided to Whatcom County firefighters.

Participants must be at least 18 years of age to participate.

If you have any additional questions or concerns about the research project or would like to receive a copy of the results, please contact Dr. Sattler at 360-650-3525 (email: David.Sattler@wwu.edu) or Chief Bill Boyd at 360-676-6831 (email: bboyd@cob.org). For questions regarding your rights as a participant, please contact:

Geri Walker, Human Protections Administrator
Western Washington University,

360-650-3220 (e-mail: geri.walker@wwu.edu)

QUESTIONNAIRE

PLEASE DO NOT WRITE YOUR NAME ON THIS QUESTIONNAIRE.

INSTRUCTIONS: Please answer all of the items. On items that have more than one choice, please place a check mark next to your choice.

1. Today's date:
   _____

2. Your gender:

   _____ Man
   _____ Woman

3. Highest level of education:

   _____ Some high school
   _____ High school diploma/GED
   _____ Associate's college degree
   _____ Bachelor's college degree
   _____ Master's college degree
   _____ Doctorate college degree

4. Age: _____

5. Ethnicity:

   _____ African American
   _____ Arab American
   _____ Asian American
   _____ Caucasian American
   _____ Latino American
   _____ Other (*specify*)
   _____

6. Current marital status:

   _____ Single
   _____ Married
   _____ Separated/Divorced
   _____Widowed
   _____ Other

7. How are you currently employed as a firefighter?

   _____ Paid full-time
   _____ Paid part-time
   _____ Volunteer

8. Number of years as a firefighter:
   _____ years

9. Current position :

   _____ Firefighter/EMT
   _____ Firefighter/Paramedic
   _____ Lieutenant or Captain
   _____ Chief Officer

PART I. INSTRUCTIONS (PLEASE READ): Firefighters may participate in a Critical Incident Stress Debriefing following a significant traumatic emergency event. A Critical Incident Stress Debriefing is a confidential structured group discussion facilitated by a mental health professional and emergency responder peers from outside agencies. It usually occurs within the first 10 days following the event. The goal is to alleviate any acute stress symptoms among responders, assess the need for follow-up, and provide closure. Because one of the purposes of this survey to evaluate Critical Incident Stress Debriefing, we would like your opinions. **Your responses are completely anonymous and confidential**.

INSTRUCTIONS: HOW WELL DOES EACH ITEM DESCRIBE YOU? **HOW WELL DOES EACH ITEM DESCRIBE YOU?**	**NOT AT ALL**	**A LITTLE BIT**	**SOMEWHAT**	**QUITE A BIT**	**VERY MUCH**
1. I am familiar with the Whatcom County Critical Incident Stress Management program.	1	2	3	4	5
2. If I ever needed it, I think Critical Incident Stress Debriefing would be helpful for me.	1	2	3	4	5
3. I have reservations about participating in a Critical Incident Stress Debriefing.	1	2	3	4	5
4. I think Critical Incident Stress Debriefings may actually increase stress for firefighters who experience a traumatic emergency incident.	1	2	3	4	5
5. I would be comfortable talking about my emotions concerning a traumatic emergency incident in front of a group of people.	1	2	3	4	5
6. Most firefighters I know have a positive attitude about Critical Incident Stress Debriefing.	1	2	3	4	5
7. Consider all the people you know who have participated in a Critical Incident Stress Debriefing. Overall, how helpful was the program at alleviating their stress? ***Skip this item if you do not know anyone who has attended a debriefing.***	1	2	3	4	5
8. Think about a debriefing you attended following an emergency event that was especially significant for you. Before you attended the debriefing, how much stress were you experiencing? ***Skip this item if you have not attended a debriefing.***	1	2	3	4	5
9. Overall, how helpful was the Critical Incident Stress Debriefing for you? ***Skip this item if you have not attended a debriefing.***	1	2	3	4	5

10. How many Critical Incident Stress Debriefings have you attended? _____ debriefings
11. Within the first 2 weeks after a debriefing, how did your stress level change (following an emergency event that was especially significant for you, or if no event was significant, then consider any debriefing you attended)? ***Skip this item if you have not attended a debriefing.*** Significant <u>decrease</u> in stress:__:__:__:__:__:__:__:__:__:__:Significant <u>increase</u> in stress (*To indicate your answer, place an "X" in a space above*.)

PART II. INSTRUCTIONS: For each item, indicate how many times during your career as a firefighter each of the following has happened to you.

1.	Seriously injured during line of duty	_____ times
2.	Real possibility of serious injury or death during line of duty (that did not result in actual serious injury)	_____ times
3.	Directly exposed to hazardous materials	_____ times
4.	Fellow firefighter had real possibility of serious injury or death during line of duty	_____ times
5.	Actively involved in a call involving a friend or family member	_____ times
6.	Actively involved in an incident involving one or more fatalities	_____ times
7.	Actively involved in a call involving serious injury to or death of a child	_____ times
8.	Actively involved in a call involving real possibility for serious injury to or death of a child	_____ times
9.	Actively involved in a call where a child was deliberately abused	_____ times

10. Actively involved in a violent situation requiring police protection for firefighters while on scene _____ times

11. Citizen verbally or physically threatened me at the scene of a call _____ times

12. Critical/negative media coverage of department activities _____ times

13. Close contact with victim who was burned or mutilated _____ times

14. Removed dead body from incident _____ times

15. Prolonged rescue of trapped victim with life-threatening injuries _____ times

PART III. INSTRUCTIONS: Circle the number to the right of each item to indicate how much that item describes you. **HOW WELL DOES THE ITEM DESCRIBE YOU?**	**NOT AT ALL**	**A LITTLE BIT**	**SOMEWHAT**	**QUITE A BIT**	**VERY MUCH**
1. If I let myself experience certain emotions about a call, I might not be as good at maintaining control during the next call or situation.	1	2	3	4	5
2. If I let myself experience certain emotions about a call, it could negatively influence my performance on the next call.	1	2	3	4	5
3. If I allowed disturbing images to affect me emotionally when I'm on a call, I would not be able to perform my job well.	1	2	3	4	5
4. I believe that feelings of fear at an emergency incident can hinder a firefighter's performance.	1	2	3	4	5
5. During a call, I like the feeling of control over a hectic situation.	1	2	3	4	5
6. I like the challenge of relying on my mental abilities and technical skills to quickly solve any problem that suddenly presents itself.	1	2	3	4	5
7. I enjoy the unpredictability of an emergency call.	1	2	3	4	5
8. When I became a firefighter, I had to demonstrate my commitment to the team before I felt accepted.	1	2	3	4	5
9. When my fellow firefighters and I have done a good job on a stressful emergency incident, we express our feelings of success (e.g., by giving high-fives, cracking jokes, or "ribbing" each other).	1	2	3	4	5
10. If I voice my personal problems to my fellow firefighters, it can draw attention that I would prefer not to have.	1	2	3	4	5
11. It is not appropriate for a member of the team to call attention to himself or herself by showing excessive pride in his or her own personal efforts.	1	2	3	4	5
12. In the Department, it's important to be more focused on the team than the individual.	1	2	3	4	5
13. On some calls, I push myself to the edge both physically and mentally.	1	2	3	4	5

14. Sometimes I worry that my best efforts on an emergency call will not be enough.	1	2	3	4	5
15. Overall, I think society says that men should hold their emotions in check more than women.	1	2	3	4	5
16. During most emergency situations, it is best to combat upset feelings by remaining detached.	1	2	3	4	5
17. After a stressful emergency call, I like to talk about what I was thinking and feeling during the call.	1	2	3	4	5
18. To release overwhelming feelings of emotions, I will let myself cry.	1	2	3	4	5
19. I drink alcohol or use drugs to relax and release tension.	1	2	3	4	5
20. Emotions on the job can be dangerous because my teammates rely on me to perform.	1	2	3	4	5
21. Members of my team have expectations about how we should express emotions about our reactions to a call.	1	2	3	4	5
22. A firefighter who loses his/her composure on a call might not be as reliable as I thought he/she was.	1	2	3	4	5
23. My ability to manage my emotions is critical in my ability to perform my work.	1	2	3	4	5
24. I have felt pressure to appear mentally strong to my team.	1	2	3	4	5

HOW MUCH DOES THE ITEM DESCRIBE YOU?	**NOT AT ALL**	**A LITTLE BIT**	**SOMEWHAT**	**QUITE A BIT**	**VERY MUCH**
25. I do not like adrenaline rushes on the job because the emotions that can accompany them may get in the way of my performance.	1	2	3	4	5
26. It can be difficult to balance the demands of work with my home life.	1	2	3	4	5
27. My commitment to the Department can interfere with my responsibilities at home.	1	2	3	4	5
28. Knowing that I have helped someone on the job helps me to cope with any tragedy I saw.	1	2	3	4	5
29. When talking with a victim, I do not discuss the severity of injuries with him/her because it could send him or her into shock.	1	2	3	4	5
30. When talking with a victim, firefighters should appear confident and in control.	1	2	3	4	5
31. Sometimes I cannot express my sympathies to a victim because doing so would interfere with my remaining duties on the call.	1	2	3	4	5
32. In order to gain the compliance of victims and their families when on a call, I must control my emotions in their presence.	1	2	3	4	5
33. The tragedies of the lives of some of the victims I've seen (e.g., due to poverty or drugs) has taken a toll on me.	1	2	3	4	5
34. Seeing what I've seen as a firefighter has taken a toll on me.	1	2	3	4	5
35. I believe that there are a number of measures that people can take to reduce their risk.	1	2	3	4	5

36. When I get what I want, it is usually because I'm lucky.	1	2	3	4	5
37. It is not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.	1	2	3	4	5
38. I can pretty much determine what will happen in my life.	1	2	3	4	5
39. I think volunteer firefighters may have higher levels of performance anxiety because they do not go on as many calls as paid full-time firefighters.	1	2	3	4	5
40. Working under severe time pressure due to having to respond to too many calls creates stress.	1	2	3	4	5
41. After having a few days off, it is not uncommon for me to come back to work not feeling refreshed because I have been so busy during my time off.	1	2	3	4	5
42. Sometimes I feel burned-out on the job.	1	2	3	4	5
43. People on my team can experience burnout because of poor administrative support.	1	2	3	4	5
44. Overall, I feel good about my job.	1	2	3	4	5
45. My immediate supervisors care about my well-being.	1	2	3	4	5
46. My immediate supervisors give me a lot of support.	1	2	3	4	5
47. My fellow firefighters give me a lot of support.	1	2	3	4	5
48. My family or significant other is always there to help me should I need them.	1	2	3	4	5
49. I have someone who talks with me about my problems, should I want to.	1	2	3	4	5
50. My family or significant other resents the time that I do not spend with them because of my duties as a firefighter.	1	2	3	4	5
51. I shield my family or significant others from the negative parts of being a firefighter.	1	2	3	4	5
52. I feel that some supervisors make questionable decisions during an emergency incident.	1	2	3	4	5
53. I spend more time thinking about the positive calls than the negative calls.	1	2	3	4	5
54. I would like to see the Department have a short program (e.g., 1-2 nights) for family members and significant others to show them ways they can support their firefighters.	1	2	3	4	5
55. It is important for us to have operational debriefings or critiques in which the team discusses how we handled a call and what we can do to improve our response.	1	2	3	4	5
56. When I get really stressed, I take special care to eat properly.	1	2	3	4	5
57. When I get really stressed, I take special care to get adequate sleep.	1	2	3	4	5

PART IV. INSTRUCTIONS: There are lots of ways people deal with stress. These questions ask what you generally do when you experience stressful events. **WHAT DO YOU DO WHEN YOU EXPERIENCE STRESS?**	**NOT AT ALL**	**A LITTLE BIT**	**SOMEWHAT**	**QUITE A BIT**	**VERY MUCH**
1. I take action to solve the problem.	1	2	3	4	5
2. I make a plan of action.	1	2	3	4	5
3. I put aside other activities in order to concentrate on the problem.	1	2	3	4	5
4. I hold off doing anything about the problem until the situation permits.	1	2	3	4	5
5. I try to get advice from someone about what he/she did.	1	2	3	4	5
6. I talk to someone about how I feel.	1	2	3	4	5
7. I look for something good in what is happening.	1	2	3	4	5
8. I learn to live with the problem.	1	2	3	4	5
9. I seek God's help.	1	2	3	4	5
10. I let my feelings out.	1	2	3	4	5
11. I refuse to believe that it has happened.	1	2	3	4	5
12. I admit to myself that I cannot deal with the problem, and quit trying.	1	2	3	4	5
13. I turn to work or other activities to take my mind off things.	1	2	3	4	5
14. I drink alcohol and/or use drugs in order to think about it less.	1	2	3	4	5

PART V. INSTRUCTIONS: Circle a number to the right of each item to indicate how much that item describes you DURING THE PAST 30 DAYS. **HOW WELL DOES THE ITEM DESCRIBE YOU DURING THE PAST 30 DAYS?**	**NOT AT ALL**	**A LITTLE BIT**	**SOMEWHAT**	**QUITE A BIT**	**VERY MUCH**
1. Having adequate time for enough sleep	1	2	3	4	5
2. Feeling valuable to others	1	2	3	4	5
3. Feeling close to one or more family members	1	2	3	4	5
4. Feeling that I am accomplishing my goals	1	2	3	4	5
5. Having a sense of optimism	1	2	3	4	5
6. Having a sense of humor	1	2	3	4	5
7. Family stability	1	2	3	4	5
8. Stable employment	1	2	3	4	5
9. Having adequate free time	1	2	3	4	5
10. Feeling that I have control over my life	1	2	3	4	5
11. Feeling close to at least one friend	1	2	3	4	5
12. Motivation to get things done	1	2	3	4	5
13. Feeling support from co-workers	1	2	3	4	5
14. Feeling companionship	1	2	3	4	5
15. Feeling that my life has purpose	1	2	3	4	5
16. Feeling that I am doing the right things with my life	1	2	3	4	5
17. Good physical health	1	2	3	4	5
18. Good financial status	1	2	3	4	5
19. Having adequate time with loved ones	1	2	3	4	5
20. Feeling a sense of safety and security	1	2	3	4	5
21. Feeling time is standing still	1	2	3	4	5
22. Feeling mixed up or disoriented	1	2	3	4	5
23. Having nightmares	1	2	3	4	5

HOW WELL DOES THE ITEM DESCRIBE YOU DURING THE PAST 30 DAYS?	NOT AT ALL	A LITTLE BIT	SOMEWHAT	QUITE A BIT	VERY MUCH
24. Having difficulty sleeping	1	2	3	4	5
25. Being slow to react to people around me	1	2	3	4	5
26. Having difficulty doing work or other things I need to do	1	2	3	4	5
27. Avoiding things that remind me of an emergency incident	1	2	3	4	5
28. Feeling anxious	1	2	3	4	5
29. Trying not to talk about stressful emergency incidents	1	2	3	4	5
30. Thinking about a stressful emergency incident when I don't want to	1	2	3	4	5
31. Having trouble feeling my emotions	1	2	3	4	5
32. Getting upset and/or angry easily	1	2	3	4	5
33. Getting upset when exposed to things that remind me of a stressful emergency incident	1	2	3	4	5
34. Not feeling like myself	1	2	3	4	5
35. Having difficulty remembering important things about a stressful emergency incident	1	2	3	4	5
36. Feeling emotionally numb	1	2	3	4	5
37. Feeling irritable or on edge	1	2	3	4	5

PART VI. INSTRUCTIONS: HOW HAVE THE FOLLOWING CHANGED AS A RESULT OF YOUR BEING A FIREFIGHTER?	SIGNIFICANT DECREAE	SOME DECREASE	LITTLE DECREASE	NO CHANGE	LITTLE INCREASE	SOME INCREASE	SIGNIFICANT INCREASE
1. Having new priorities about what is important in my life.	1	2	3	4	5	6	7
2. Having grown as a person as a result of my experiences as a firefighter.	1	2	3	4	5	6	7
3. Discovering that I am emotionally stronger than I thought I was.	1	2	3	4	5	6	7
4. Having a new respect for people living in my community.	1	2	3	4	5	6	7
5. Appreciating each day more.	1	2	3	4	5	6	7
6. Feeling closer to one or more family members.	1	2	3	4	5	6	7
7. Feeling that my life has purpose.	1	2	3	4	5	6	7
8. Observing my religious faith.	1	2	3	4	5	6	7

Thank you very much for supporting this important project by completing this questionnaire. Your responses will be used to improve assistance to firefighters and other emergency responders after significant emergency events. Thank you.